

DIRECTV 10,11 and 12



Customer	DIRECTV, Inc.		
Spacecraft	Boeing 702		
Quantity	2 and on-ground spare		
Launch	DIRECTV 10	DIRECTV 11	DIRECTV 12
Date	July 6, 2007	March 19, 2008	TBD
Vehicle	Proton	Sea Launch	TBD
Site	Baikonur	Sea Launch	TBD
Orbital slots	102.8° W Longitude and 99.2° W Longitude		
Contract life	15 years		



Unprecedented High Definition Television (HDTV)

DIRECTV, Inc. has again chosen Boeing, the world's leading manufacturer of government and commercial communications satellites, to expand its constellation of satellites. The new spacecraft will enable DIRECTV to provide consumers unprecedented local and national High Definition Television (HDTV). Boeing has built eight satellites for DIRECTV since 1993.

Two Boeing 702 satellites, called DIRECTV 10 and DIRECTV 11, an on-ground spare spacecraft, and six Ka-band uplink sites will enable DIRECTV to significantly expand broadcasting to its customers across the continental United States, Hawaii, and Alaska. In addition to expanding national HDTV broadcasting, DIRECTV 10 and DIRECTV 11 will allow DIRECTV to broadcast local HDTV to 90 percent of its customers.

DIRECTV 10 was launched on July 6, 2007 and placed into an orbital slot of 102.8 degrees West longitude. DIRECTV 11 was launched on March 19, 2008 and placed into orbital slot of 99.2 degrees West longitude.

The next-generation DIRECTV satellites feature state-of-the-art antenna and payload subsystems that will provide DIRECTV customers with the unparalleled national and local HDTV service. The powerful payload

integrates 32 active and 12 spare National Service Ka-band Traveling Wave Tube Amplifiers (TWTA) in addition to 55 active and 15 spare spot beam TWTA's. The payload will be powered by a massive solar array that spans more than 48 meters—a length greater than the height of the Statue of Liberty—consisting of ultra triple-junction gallium arsenide solar cells.

DIRECTV 10 and 11 will receive and transmit programming throughout the United States with two imposing Ka-band reflectors, each measuring 2.8 meters in diameter, and nine other Ka-band reflectors.

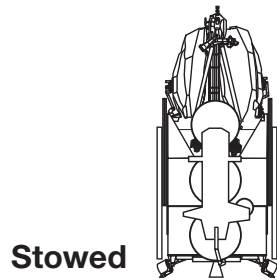
The satellites are being designed and manufactured by Boeing Space and Intelligence Systems at the Satellite Development Center. Located in El Segundo, Calif., the Satellite Development Center encompasses approximately 1 million square feet. The state-of-the-art facility is the largest dedicated satellite factory in the world.

The agile Boeing 702 is the most powerful satellite available today. Nineteen of these impressive satellites have been ordered, with options for six more.

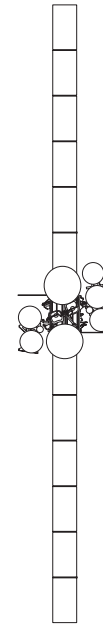
Boeing's satellite manufacturing and process initiatives were validated with the Software Engineering Institute's Capability Maturity Model Integration (CMMI) Level 5 certification and the Aerospace Standards (AS) 9100 certification.

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S P E C I F I C A T I O N S



Stowed



In Orbit

PAYLOAD

National/Alaska Ka-band	}	28 active TWTAs
		8 spare TWTAs
National/Hawaii Ka-band	}	4 active TWTAs
		4 spare TWTAs
Spot Ka-band	}	55 Active TWTAs
		15 Spare TWTAs

POWER

Solar	
Beginning of life	18 kw
End of life	16 kw
Panels	2 wings each w/6 panels of Ultra Triple-Junction (UTJ) gallium arsenide solar cells
Batteries	59 cell NiH, 328 Ahr

PROPULSION

Liquid apogee engine	100 lbf 445 N
XIPS thrusters	Four 25 cm

DIMENSIONS

In Orbit	H: 8 m (26 ft) W, antennas: 7.3 m (24 ft) L, solar arrays: 48.1 m (158 ft)
Stowed	H: 8 m (26 ft) W: 3.7 m x 3.3 m (12 ft x 11 ft)
Mass	
Launch	6,060 kg (13,360 lbs)
In orbit (beginning of life)	3,700 kg (8,157 lbs)

ANTENNAS

Nadir: two Ka-band 110" Gregorian reflectors
Nadir: two Ka-band sub-reflectors
Four 69" transmit reflectors (Ka-band)
One 64" receive reflectors (Ka-band)
Two 20" track reflectors (Ka-band)

RMS 127724_1-08

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